

**ABSTRACT OF THE DISCLOSURE**

The present invention comprises systems and methods for detecting flame blowout precursors in combustors. The blowout precursor detection system comprises a combustor, a pressure measuring device, and a blowout precursor detection unit. A combustion controller may also be used to control combustor parameters. The methods of the present invention comprise receiving pressure data measured by an acoustic pressure measuring device, performing one or a combination of spectral analysis, statistical analysis, and wavelet analysis on received pressure data, and determining the existence of a blowout precursor based on such analyses. The spectral analysis, statistical analysis, and wavelet analysis further comprise their respective sub-methods to determine the existence of blowout precursors.